

WHAT IS CLAIMED IS:

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1. A thermally energy efficient vehicle comprising:

a vehicle structure, wherein said vehicle
5 structure includes generally interconnected
structural members that form a frame for the vehicle
and generally planar interconnected panels that
define a shape of the vehicle;

a low transmittance glass window positioned
10 within the vehicle structure, wherein said low
transmittance glass window increases a thermal
resistance of the vehicle; and

an energy efficient thermal management
system providing exterior thermal management and
15 interior thermal management for the vehicle, wherein
said energy efficient thermal management system
consumes less thermal energy as a result of the
increased thermal resistance of the vehicle.

20 2. A thermally energy efficient vehicle as
set forth in claim 1 wherein a thermally efficient
structural material is utilized for a structural
member, to reduce a thermal mass of said structural
member.

3. A thermally energy efficient vehicle as set forth in claim 1 wherein an energy efficient insulator is attached to a portion of said vehicle structure to increase a thermal resistance of the vehicle.

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4. A thermally energy efficient vehicle as set forth in claim 3 wherein said energy efficient insulator provides a thermal barrier and an acoustic barrier.

5. A thermally energy efficient vehicle as set forth in claim 3 wherein said energy efficient insulator is a gas-filled panel.

6. A thermally energy efficient vehicle as set forth in claim 1 wherein said low transmittance glass window includes two parallel sheets of glass separated by an air gap, to improve a thermal resistance of the low transmittance glass.

7. A thermally energy efficient vehicle as set forth in claim 6 wherein said low transmittance glass includes a solar reflective film attached to an outside surface of one of the two parallel sheets of glass.

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8. A thermally energy efficient vehicle as set forth in claim 6 wherein said low transmittance glass includes a desiccant material disposed within
5 the air gap between the two parallel sheets of glass.

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9. A thermally energy efficient vehicle as set forth in claim 6 wherein the two parallel sheets of glass are made from a glass/polycarbonate
10 composite material.

10. A thermally energy efficient vehicle as set forth in claim 1 wherein a thermal energy consumption capacity of the energy efficient thermal
15 management system is reduced by increasing the thermal resistance of the vehicle.

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11. A thermally energy efficient vehicle comprising:

20 a vehicle structure, wherein said vehicle structure includes generally interconnected structural members that form a frame for the vehicle and generally planar interconnected panels that define a shape of the vehicle, wherein a thermally
25 efficient structural material is utilized for a

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structural member, to reduce a thermal mass of the vehicle;

a low transmittance glass window positioned within the vehicle structure, wherein said low transmittance glass window includes two parallel sheets of glass separated by an air gap, to increase a thermal resistance of the vehicle; and

an energy efficient thermal management system providing exterior thermal management and interior thermal management for the vehicle, wherein a thermal energy consumption capacity of said energy efficient thermal management system is decreased since said energy efficient thermal management system consumes less thermal energy resulting from the increased thermal resistance and reduced thermal mass of the vehicle.

12. A thermally energy efficient vehicle as set forth in claim 11 wherein an energy efficient insulator is attached to a portion of said vehicle structure to increase a thermal resistance of the vehicle.

13. A thermally energy efficient vehicle as set forth in claim 12 wherein said energy

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efficient insulator provides a thermal barrier and an acoustic barrier.

14. A thermally energy efficient vehicle
5 as set forth in claim 13 wherein said energy efficient insulator is a gas-filled panel.

15. A thermally energy efficient vehicle
as set forth in claim 11 wherein said low
10 transmittance glass includes a solar reflective film attached to an outside surface of one of the two parallel sheets of glass.

16. A thermally energy efficient vehicle
15 as set forth in claim 11 wherein said low transmittance glass includes a desiccant material disposed within the air gap between the two parallel sheets of glass.

Sub A6 20 17. A thermally energy efficient vehicle as set forth in claim 11 wherein the two parallel sheets of glass are made from a glass/polycarbonate composite material.

Sub B3 25 18. A thermally energy efficient vehicle comprising:

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5 a vehicle structure, wherein said vehicle structure includes generally interconnected structural members that form a frame for the vehicle and generally planar interconnected panels that define a shape of the vehicle, wherein a thermally efficient structural material is utilized for a structural member, to reduce a thermal mass of the vehicle;

10 an energy efficient insulator attached to a portion of said vehicle structure to increase a thermal resistance of the vehicle

15 a low transmittance glass window positioned within the vehicle structure, wherein said low transmittance glass window includes two parallel sheets of glass separated by an air gap, to increase the thermal resistance of the vehicle; and

20 an energy efficient thermal management system providing exterior thermal management and interior thermal management for the vehicle, wherein a thermal energy consumption capacity of said energy efficient thermal management system is decreased since said energy efficient thermal management system consumes less thermal energy resulting from the increased thermal resistance and reduced thermal mass
25 of the vehicle.

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19. A thermally energy efficient vehicle as set forth in claim 18 wherein said energy efficient insulator provides a thermal barrier and an acoustic barrier.

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20. A thermally energy efficient vehicle as set forth in claim 18 wherein said energy efficient insulator is a gas-filled panel.

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